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INDIAN FISHERIES ABSTRACTS

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I. ENTRIES

1. Apparao, T.[1], S. Reuben[1] & P.E.S. Manickam[2] (1984).

1. Waltair Research Centre of CMFRI, Waltair.
2. Central Marine Fisheries Research Institute, Cochin-682 031.
Studies on some aspects of biology and transplantation of the clam *Meretrix casta* (Chemnitz) in the Bheemunipatnam backwaters.
J. mar. biol. Ass. India, **26**(1&2) : 32-36.

Studies on the growth of *Meretrix casta* (Chemintz) showed that the clams in the natural bed grew at the rate of 3.6-3.9 mm/month while the specimens kept in the cages showed growth rates of 0.9 mm and 0.77 mm/month respectively for on bottom and off bottom culture.

... 6 ref.

2. Bakthavathsalam, R. (1987)

Dept. of Zoology, Annamalai University, Annamalai Nagar-608 002, Tamil Nadu, India.
Effects of furadan on the hepatorenal and intestinal aspartate and alanine aminotransferase activities of *Anabas testudineus*.
Poll. res., **6**(3&4) : 141-144.

A study on water, soil, plants and animals after one week of MIC accident in Bhopal indicated decolouration and defoliation of trees and arrest of photosynthetic activities. Exposure and inhalation to MIC might have induced mutation in chromosome and nucleus levels in plants and animals.

...14 ref.

3. Bakthavathsalam, R. (1988)

Dept. of Zoology, Govt. Arts College, Ariyalur-621 713, Tamil Nadu, India.
Effects of lindane and carbofuran on the lactic acid levels of the fish *Anabas testudineus* at submerged condition and on exposure to air.
Environ. & Ecol., **6**(1) : 32-37.

Exposure of the control fish *Anabas testudineus*, to sublethal concentration of lindane and carbofuran at submerged condition and on exposure to air caused unequivocal reduction in the lactic acid content of liver, muscle, heart and blood.

... 14 ref.

4. Bakthavathsalam, R. (1988)

Deptt. of Zoology, Govt. Arts College, Ariyalur-621 713, India.
Toxicity of lindane to some airbreathing fishes.
Environ. & Ecol., **6**(1) : 222-224.

Lethal threshold concentration, 120-hour LC_0 and 24 hour LC_{100} were 0.440, 0.120 and 1.200 mg/litre for *Channa punctatus*, 0.280, 0.100 and 1.100 mg/litre for *Lepidocephalichthys thermalis*, and 0.115, 0.090 and 0.150 mg/litre for *Mystus vittatus*, respectively. Of the fishes tested, *M. vittatus* was the most sensitive and *C. punctatus* the least.

5. **Balakrishnan, Sowmini (1984)**

Deptt. of Zoology, Presidency College, Madras-600 005.
Structure and chemical composition of the periostracum of *Perna viridis*.
J. mar. biol. Ass. India, **26**(1&2) : 50-57.

The periostracum of *Perna viridis* at an early growth stage showed the presence of three distinct layers with varying structural and chemical features; outer yellow, middle broad light green with vertical striations and inner most yellow layer.

... 32 ref.

6. **Barat, S. & B.B. Jana (1987)**

Fisheries and Limnology Laboratory, Dept. of Zoology, Univ. of Kalyani, Kalyani-741 235, West Bengal, India.
Effect of farming management on the distribution pattern of ammonification rates, protein mineralizing and ammonifying bacterial population in experimental culture tanks.
Bamidgeh, **39**(4) : 120-132.

The density of protein mineralizing bacteria and ammonifying bacteria as well as ammonification rates were found to be higher in air-breathing catfish farming system in concrete tanks. A distinct seasonal periodicity was also noted.

... 22 ref.

7. **Basavaraja, N.,[2], G.P. Satyanarayana Rao[1] & T.J. Varghese[2] (1988)**

1. Fisheries Research Station, Univ. of Agricultural Sciences, Hesaroghatta, Bangalore-560 089, India.
Effect of feeding 17 £- methyltestosterone on the proximate composition and organoleptic characteristics of the flesh of the common carp *Cyprinus carpio*.
Environ. & Ecol., **6**(1) : 19-26.

The muscle proximate composition and organoleptic characteristics of common carp *Cyprinus carpio* fed on pelleted feeds containing different levels of an anabolic steroid, 17£-methyltestosterone (17£-MT) were evaluated. Steroid feeding decreased moisture and ash contents and increased fat content, while it induced a slight variation in protein content.

... 30 ref.

8. **Bhaskaran, R. (1988)**

Dept. of Zoology, APA College of Arts & Culture, Palni-624 602, India.
Effect of DDT and methyl parathion on the mitochondrial respiration, SDH and ATP-ase activity of an air-breathing fish *Channa striatus*.
Environ. & Ecol., **6**(1) : 198-203.

In vitro influence of DDT and methyl parathion on the respiratory control of liver mitochondria of *Channa striatus* was studied using polarographic technique. The standard activity of liver and muscle succinate dehydrogenase averaged to 3.3 and 0.92 n moles. The influence of MP on the activity of the enzyme at *in vivo* conditions was not significant.

... 13 ref.

9. Bhattacharya, Udaya (1988)

Dept. of Zoology, Mahatma Gandhi College, Darbhanga-846 004, India.
Aspergillus niger : a new record as fish pathogen.
Environ. & Ecol., **6**(1) : 231-233.

Aspergillus niger, a fungal fish pathogen was isolated from the fish *H. fossilis* for the first time.

... 14 ref.

10. Bhattacharya, Udaya (1988)

Dept. of Zoology, Mahatma Gandhi College, L.N. Mithila University, Darbhanga-846 004, India.
A new record of fungal fish pathogen *(Helminthosporium nodulasum)* from Bihar.
Environ. & Ecol., **6**(1) : 237-238.

Helminthosporium nodulosum a non-aquatic fungus was recorded from fish *Clarias batrachus*. It was found to cause great mortality in the fishes.

... 6 ref.

11. Bhat, U.G. & B. Neelakantan (1988)

Dept. of Marine Biology, Karnataka University, Kodibag, Karwar-581 303, India.
Environmental impact on the macrobenthos distribution of Kali estuary, Karwar, Central West Coast of India.
Indian J. mar. Sci., **17**(2) : 134-142.

Seasonal variation in the distribution of macrobenthos in relation to environmental parameters has been studied at 5 different habitats of Kali estuary. 11 parameters govern the density variations of macrobenthos in Kali estuary and organic carbon, sediment and salinity being the highly significant ones.

... 29 ref.

12. Bhowmik, M.L. (1988)

Kakdwip Res. Centre of CICFRI, Kakdwip-743 347, West Bengal, India.
Limnology and productivity of some beels and baors of West Bengal with reference to recent development.
Environ. & Ecol., **6**(1) : 42-48.

The limnology and productivity of beels and baors were presented. All the beels were rich in fish varieties which contributed from 45 to 65% of the total catch where carps contributed only 30-35% and air-breathing fishes from 5 to 25%. Plankton varied from 750 to 15,000 u/litre, phytoplankton being the dominant form.

... 18 ref.

13. Borse, B.D. (1988)

Arts, Commerce & Science College, Erandol-425 109, India.
Frequency of occurrence of marine fungi from Maharashtra coast, India.
Indian J. mar. Sci., **17**(2) : 165-167.

Higher marine fungi on wood from intertidal beaches and mangroves in Maharashtra coast are reported alongwith the frequency of occurrence of the species. *Halosphaeria quadricornata* is most dominant species from beach habitats, whereas *Massarina velataspora* and Borse is dominant in the mangrove habitats.

... 15 ref.

14. Chakraborti, N.M.[1] & N.K. Das[2] (1988)

1. Central Institute of Coastal Engineering for fishery, Govt. of India, 64 Palace Road, Bangalore-560 052, India.
2. Kakdwip Research Centre of CIFRI, Kakdwip-743 347, India.
Short-term mixed culture of prawns in barckishwater ponds.
Environ. & Ecol., **6**(1) : 120-124.

Experiments on mixed culture of post larvae and juveniles of *Penaeus indicus*, *P. monodon*, *Palaemon styliferus*, *Metapenaeus monoceros* and *Metapenaeus brevicornis* were conducted upto 75 days coinciding with high salinity and temperature and medium salinity and temperature regimes. Production of 666.0 to 850.5 kg/ha per 9 months from mixed prawn farming was highest.

... 14 ref.

15. Chakrabarty, Papia & V. Banerjee (1988)

Hematology Laboratory, PG Dept. of Zoology, Patna Univ., Patna-800 005, India.
Effect of sublethal toxicity of three organophorus pesticides on the peripheral hemogram of the fish *Channa punctatus*.
Environ. & Ecol., **6**(1) : 151-158.

Variations in blood parameters of the fish *Channa punctatus* when exposed to sublethal concentrations of thimet 10 G(0.2 mg/litre), elsan 2% dust (2.0 mg/litre) and banazon 5 G (5.0 mg/litre) for 15,30,45,60,75 and 90 days were reported. The rapid fluctuations of blood parameters indicated the toxic effect of these pesticides and their long-term toxic effect as the values did not return to control values even after 3 months. Elsan 2% dust for erythrocytes and thrombocytes and banazon 5 G for leucocytes were most toxic.

... 19 ref.

16. Chakraborty, Partha Sarathi & Samir Banerjee (1988)

Aquaculture Research Unit, Dept. of Zoology, Univ. of Calcutta, 35 Ballygunge, Circular Road, Calcutta-700 019, India.
Methyl parathion as a fish toxicant for eradication of trash fishes from freshwater pond.
Environ. & Ecol., **6**(1) : 148-150.

Different species of unwanted fishes showed severe lethal effect at 0.10 ppm of methyl parathion (50% /wt emulsified concentrate). Acetylcholinesterase inhibition of exposed fish ranged from 14 to 37%. The toxicant did not influence physico-chemical parameters of water. The toxicant lost residual toxicity after a period of 2 weeks.

... 10 ref.

17. **Chaphekar, S.B. & Sanjay V. Deshmukh (1987)**

The Institute of Science, Bombay.
Mangroves
Encology, **1**(9) : 1-13.

The paper incorporates different aspects of mangrove plants and their ecosystem.

18. **Chaporkar, C.B. & L.V. Gangawane (1987)**

Soil Microbiology and Pesticides laboratory, Dept. of Botany, Marathwada Univ., Aurangabad/431 004, India.
Response of *Nostoc hatei* to BHC, BPMC and hexavin.
Poll. res., **6**(3&4) : 101-102.

Growth of the alga *(Nostoc hatei)* was found to be markedly reduced by Hexavin (even at 10 ug/ml). Alga could grow upto 100 ug/ml of BHC but two fold decrease in growth was recorded when the alga was treatd with BPMC. The insecticides reduced nitrogen fixation but BHC found to stimulate it.
... 7 ref.

19. **Chaudhari, T.R.[1], M.L. Jadhav[2], & V.S. Lomte[3] (1988)**

1. 2 Tagore Colony, Deopur, Dhule-424 005, India.
2. Jai-Hind College, Deopur, Dhule-424 005, India.
3. Dept. of Zoology, M.U., Aurangabad, India.
Acute toxicity of Organophosphates to fresh water snails from Panzara river at Dhule, MS.
Environ. & Ecol., **6**(1) : 244-245.

About 24 and 48 hours lethal concentrations (LC_{50}) of cythion, zolone and rogor were determined for freshwater snails, *Limnaea acuminata, Thiara scabra, Thiara lineata* in the laboratory. Cythion was the most toxcic while zolone was less toxic to the snails.
... 6 ref.

20. **Chaudhuri, A.B. (1988)**

131, Netaji Subhas Chandra Bose Rd., Block-10, Flat-4, Calcutta-700 040.
Biotic communities in endangered aquatic and mangrove environment.
Sci. Cult., **54**(6) : 182-187.

Wetland is defined and categorised under six distinct types. Biotic communities, *i.e.* flora and fauna dealt from all such marshy places of the Indian subcontinent. The needs of conservation of the endangered flora and fauna are mentioned along with their interdependence.

21. **Datta, B.K., K.H. Mody, B.J. Mehta & V.D. Chouhan (1988)**

Central Salt & Marine Chemicals Research Institute,
Bhavanagar-364 002, India.
Culture studies on marine alga *Gelidiella acerosa* (Forskal) beldmann et namel.
Indian J. mar. Sci., **17**(2) : 162-164.

Modified Ground medium was found to be the best for vegetative growth of marine alga *Gelidiella accrosa* with 0.5 ug l^{-1} of vit. B_{12}, 30 um Phosphate, 0.3 m M nitrate, at pH.8 and $30x10^{-3}$ salinity levels.
... 18 ref.

22. David, E., J. Nageswara Rao, P. Reddanna & S. Govindappa (1988)

Dept. of Zoology, Sri Venkateswara Univ., Tirupati-517 502, India.
Changes in carbohydrate metabolism associated with atrophy and electrical stimulation in the gastroenemius muscle of *Rana hexadactyla* (Lesoa)
Curr. Sci., **57**(4) : 216-218.

The impact of electrical stimulation of muscle carbohydrate metabolism of denervation atrophied muscle of frog *Rana hexadactyla* was analysed, since carbohydrate metabolism is believed to be associated with muscle contractile kinetics.
... 11 ref.

23. David, E., J. Nageswara Rao, P. Reddanna & S. Govindappa (1988)

Dept. of Zoology, Sri Venkateswara Univ., Tirupati-517 502, India.
Effect of *In vivo* electrical stimulations on protein metabolism of denervated gastroenemius muscle of frog *R. hexadactyla*.
Curr. Sci., **57**(15) : 827-829.

The paper deals with effect of electrical stimulation on the protein metabolism of normal gastroenemius muscle, sciatectomized (dis-use) muscle and sciatoctomized muscle, subjected to electrical stimulation. Training programme resulted in adaptive changes in the denervated atrophied muscle. Induced disuse resulted in muscular atrophy induced exercise of the sectatectomized muscle retarded atrophy with decreased accumulation of the free amino acids and increased oxidative diamination.
... 14 ref.

24. Desai, P. V. (1988)

Biology Dept., Dhompe College of Arts & Science, Panaji-403 001, India.
Alkaline phosphatase activity of phytoplankton from managrove ecosystem of Chorao (Goa), West coast of India.
Indian J. mar. Sci., **17**(2) : 158-159.

The premonsoon and postmonsoon abundance in phytoplankton was associated with the peak in alkaline phosphatase activity. The relative phytoplankton alkaline phosphatase activity varied slightly at surface, subsurface and bottom levels but the average relative phytoplankton alkaline phosphatase activity in the bottom layer exceeded that of the surface layer.
... 19 ref.

25. Deshmukh, Vinay D. (1984)

Veraval Research Centre of CMFRI, Veraval.
Studies on parasitic infestation of *Nematopalaemon tenuipes* Henderson, by *Bopyrus squillarum latreille* at Bombay Part 1. Effects on size and growth of *N. tenuipes*.
J. mar. biol. Ass. India, **26**(1&2) : 136-144.

Both the sexes of *Nematopalaemon tenuipes* were equally infected by the branchial isopod parasite *Bopyrus squillarum* and they showed two peaks of infection - May and October, in all the three years from 1979 to 1981. Death appears to be caused by the slow attrition caused by the blocking of the branchial surface by the parasite.

... 16 ref.

26. Dobriyal, Anoop K. (1988)

Dept. of Zoology, Garhwal Univ. Campus, Pauri Garhwal-246 001, India.
Fecundity of the Chinese silver carp *Hypophthalmichthys molitrix* (Val.) from Gujaratal fish farm, Jaunpur, U.P.
Proc. Indian Acad. Sci. (Anim.Sci.), **97**(2) : 169-173.

Data on the fecundity of the silver carp was statistically computed and the relationships between fecundity and body measurements were found to be linear. The fecundity was more closely related to the body weight than fish length and the ovary weight.

... 16 ref.

27. Dutta, S.P.S., Y.R. Malhotra & S.N. Suri (1987)

Dept. of Biosciences, Univ. of Jammu, Jammu-180 001, India.
Anomalous oxygen records in dark and light bottles from a fish pond, Jammu.
Poll. Res., **6**(3&4) : 95-96.

The anomalous conditions of oxygen in a pond of Jammu obtained by light and dark bottle experiment have been discussed.

... 6 ref.

28. George, M.D. (1988)

National Inst. of Oceanography, Dona Paula, Goa-403 004, India.
Distribution of labile & non-labile forms of Cd, Pb & Cu in Lakshadweep.
Indian J. mar. Sci., **17**(2) : 111-113.

Distribution of labile and non-labile forms in the dissolved state of Cd, Pb and Cu inside and around the lagoons of Kavaratti, Agatti and Kalpeni was studied. The concentrations of all the metals were higher inside the lagoon than outside. The percentage of non-labile forms was also higher within lagoons.

... 11 ref.

29. Ghosh, T.K. (1987)

Dept. of Zoology, Univ. of Kalyani, Kalyani-741 235, West Bengal, India.
Comparative toxicogenic evaluation of the three organophosphate pesticides on some selected enzyme in the freshwater teleost *Sarotherodon mossambicus*.
Poll. res., **6**(3&4) : 133-138.

The toxicogenic influence of three organophosphate pesticides, *viz.* Ekalux, Roger, Suquin on cytochrome oxidase in liver, kidney, muscle, gill and brain tissues of the fish, *S. mossambicus* indicated the inhibition in following order : Gill>Brain>Muscles > kidney > liver. The toxicogenic property of suquin is more than those of Ekalux and Roger.

... 17 ref.

30. **Ghosh, T.K. & S.K. Chatterjee (1988)**

Inst. of Science Education, Burdwan Univ., Burdwan-713 104, India.
Toxic influence of fenvalerate on the biological parameters of the fish *Anabas testudineus*.
Environ. & Ecol., **6**(1) : 107-110.

Sublethal concentration (one-fourth of 48 hour LC50) of fenvalerate (L-cyano-3 phenoxy phenyl-4-chloro-L-(1-methylethyl benzene acetate)) induced significant alterations of lipid and cholesterol contents in liver, testis and ovary of the fish *Anabas testudineus*.

... 15 ref.

31. **Gopalakrishnan, T.C., C.B. Lalithambika Devi, P.N. Aravindakshan, K.K.C. Nair, T. Balasubramanian & M. Krishnakutty (1988)**

National Inst. of Oceanography, Regional Centre, Cochin-682 018.
Phytoplankton and zooplankton of some paddy-cum-prawn culture fields in and around Cochin.
Mahasagar, **21**(2) : 85-94.

Quantitative and qualitative aspects of phytoplankton and zooplankton of some paddy-cum-prawn culture fields in and around Cochin showed the striking regional differences in salinity and nutrient concentrations.

... 22 ref.

32. **Gopinathan, C.P. (1984)**

Central Marine Fisheries Research Inst., Cochin-682 031.
Growth characteristics of some nannoplankters.
J. mar. biol. Ass. India, **26**(1&2) : 89-94.

In this account the growth characteristics or growth kinetics of ten species of nannoplankters, mostly phytoflagellates were presented. The growth kinetics of other micro-algae studied elswhere also is briefly discussed.

... 22 ref.

33. **Gopinathan, C.P. (1984)**

Tuticorin Research Centre of CMFRI, 93 North Beach Rd.,
Tuticorin-628 001.
A systematic account of the littoral diatoms of the south west coast of India.
J. mar. biol. Ass. India, **26**(1&2) : 1-31.

A systematic enumeration of 109 littoral and epiphytic diatoms of the southwest coast of India is presented. This work forms a supplement to the available information regarding the diatom flora of the Indian seas.

... 92 ref.

34. **Gowda, Gangadhara & S.L. Shanbhogue (1988)**

College of Fisheries, Mangalore-2.
On the reproductive biology of grey mullet *Valamugil seheli* (Forskal) from Mangalore waters.
Mahasagar, **21**(2) : 105-112.

Reproductive biology dealing with spawning at first maturity, fecundity and sex-ratio of *Valamugil seheli* from Mangalore waters were studied. The fecundity of the species varied from 2,08,482 to 12,78,138 eggs. The sex ratio of males and females was 2.09:1.

... 11 ref.

35.Gudekar, V.R. & R.K. Trivedy (1988)

Post Graduate Dept. of Environmental Pollution, Y.C. College of Science, Karad-415 110, India.
Effect of the depth of the system, on the treatment efficiency of water hyacinth.
J. Environ. Biol., **9**(3) : 275-279.

The efficiency of removal of dissolved solids, COD, and BOD by water hyacinth from sewage and industrial wastes is more with shallow depth but the removal of suspended solids is independent of depth.

... 5 ref.

36. Hajra, Ansuman, Apurba Ghosh & Sanat Kumar Mandal (1988)

CIFRI, Barrackpore-743 101, West Bengal, India.
Biochemical studies on the determination of optimum dietary protein to energy ratio for tiger prawn, *Penaeus monodon* (Fab.), juveniles.
Aquaculture, **71**(1/2) : 71-79.

Six isonitrogenous pelletized diets with protein level of approx. 46% and energy level varying between 373.10 and 435.30 Kcal/100 g were fed to groups of *Penaeus monodon* juveniles at 10% of total biomass in a 21 day study. Digestible energy from dietary carbohydrate was seen to exert a transient protein-sparing action in these formulations.

... 33 ref.

37. Hegde, V.N. (1984)

Taraporevala Aquarium, Netaji Subhas Road, Bombay-400,002.
Abnormal dorsal spine in *Triacanthus brevirostris* (temminck ad schlegel).
J. mar. biol. Ass. India, **26**(1&2) : 167-168.

An abnormal specimen of *Triacanthus brevirostris* with branched dorsal spine is reported in this communication.

... 5 ref.

38. Inbaraj, R. Moses & S. Haider (1988)

Dept. of Zoology, Banaras Hindu Univ., Varanasi-221 005, India.
In vitro effectiveness of estradiol-17-ß, androgens, corticosteroids, progesteron and other pregene derivatives on germinal vesicle breakdown in oocytes of the exotic common carp *Cyprinus carpio* (L.).
Indian J. Exp. Biol., **26**(8) : 583-585.

17a, 20ß-Dihydroxoprogesterone was most potent maturation inducing steroid. It could induce 35% significant germinal vesicle breakdown (GVBD) at a concentration of 0.001 µg/ml.

... 20 ref.

39. Jacob, Rani Mary & R. Vasantha Kumar (1984)

Vizhinjam Research Centre of CMFRI, Vizhinjam, Trivandrum(Via) Kerala.
Primary productivity in the nearshore waters of Vizhinjam, Trivandrum.
J. mar. biol.Ass. India, **26**(1&2) : 66-70.

Primary productivity and related aspects in Vizhinjam Bay and adjacent open sea were investigated from April 1983 to 1984. The rate of production was estimated by determining O_2 by the light and dark bottle method. The monthly variations in surface production were not significantly related to either temperature or salinity. the correlation between primary production and nutrient concentration was discussed.

... 12 ref.

40. Jain, S.K.[1], G.S. Gujral[2], N.K. Jha [2]& P. Vasudevan[1] (1988)

1. Centre for Rural Development and Appropriate Technology
2. Dept. of Chemistry, Indian Inst. of Technology, New Delhi-110 016, India.
Heavy metal uptake by *Pleurotus sajor-caju* from metal-enriched duckweed substrate.
Biological Wastes, **24**(4) : 275-282.

Absorption of heavy metals by duckweed, *Lemna minor* and their translocation into fruit bodies of the edible mushroom grown on metal enriched duckweek reduced the biological efficacy of mushroom. Accumulation of zinc was found to be maximum and that of lead and cadmium was less.

... 16 ref.

41. Jampani, C.S.R. (1988)

Dept. of Botany, Nagarjuna Univ., Nagarjunanagar-522 510, India.
Lead toxicity of alga Synechococcus aeruginosus and its recovery by nutrients.
J. Environ. Biol., **9**(3) : 261-269.

Growth and survival of the blue green algae Synechococcus aerugino was inhibited by lead at 100 and 200 mg/ml respectively. Sensitivity of lead toxicity increased with starvation. Presence of nutrients (N,P,C) acted against lead toxicity.

... 13 ref.

42. Joseph, Ammini[1] & P.V. Ramchandran Nair[2] (1984

1. School of Environmental Studies, Univ. of Cochin, Ernakulam, Cochin-682 016.
2. Central Marine Fisheries Research Inst., Cochin-682 031.
A note on the measurement of extracellular products (ECP) in some nannoplankters
J. mar. biol. Ass. India, **26**(1&2) : 155-157.

The rate of excretion of dissolved organic carbon in two nannoplanktonic flagellates isolated locally and developed in axenic cultures has been measured using the ^{14}C technique. The ecological implication of phytoplankton excretory products is also discussed.

... 9 ref.

43. **Joseph, K.J.[1], P.N.K. Nambisan[1], C.S. Shynamma[2] & P.T. Lakshmanan[3] (1984)**

1. School of Marine Sciences, Univ. of Cochin, Cochin-682 016.
2. School of Environment Studies, Univ. of Cochin, Cochin-682 016.
3. Central Inst. of Fisheries Technology, Matsyapuri, Cochin-682 029.

Studies on phytoplankton in polluted waters.
J. mar. biol. Ass. India, **26**(1&2) : 42-46.

Seasonal and spatial distribution of phytoplankton in the pollution hit areas of the Periyar river tributary near the industrial belt of Alwaye have been studied.

... 7 ref.

44. **Kaliaperumal, N.[1] & G. Pandian[2] (1984)**

1. Regional Centre of CMFRI, Marine Fisheries,
P.O. Tamil Nadu-623 520.
2. CMFRI, Cochin-682 031.

Marine algal flora from some localities of south Tamil Nadu Coast.
J. mar. biol. Ass. India, **26**(1&2) : 159-164.

Marine algae were collected from six localities along south Tamil Nadu coast. Totally 98 algae belonging to the groups Chlorophyta, Phaeophyta, Rhodophyta and Cyanophyta were recorded.

... 11 ref.

45. **Kaul, Kamini & Samir Bhattacharya (1988)**

Dept. of Zoology, School of Life Science, Visva-Bharati Univ., Santiniketan-731 235, India.

Thyroid hormone stimulation of the perch (*Anabas testudineus* Bloch) ovarian mitochondrial steroidogenesis.
Indian J. Exp. Biol., **26**(6) : 413-417.

In vitro incubation of oocytes from *Anabas testudineus*, with triiodothyronine resulted in increased ability of mitochondria to synthesize progesterone from cholesterol.

... 39 ref.

46. **Khan, Mohamad Zafar[1] & V.M. Deshmukh[2] (1988)**

1. Central Marine Fisheries Research Inst., Cochin-682 031.
2. Bombay Research Centre of CMFRI, Bombay.

A note on the occurrence of Bombay duck *Harpodon nehereus* (Ham.) without pelvic fins.
J. mar. biol. Ass. India, **26**(1&2) : 154-155.

Bombay duck *Harpodon nehereus* with single pelvic fin was observed in trawlnet landings at Veraval and another specimen without pelvic fin was observed in dolnet catch at Versova, Bombay.

... 5 ref.

47. Khatri, T.C. (1988)

Zoological Survey of India, 100 Santhome High Road, Madras-600 028, India.
Seasonal distribution of zooplankton in the Idukki reservoir of Kerala, India.
Environ. & Ecol., **6**(1) : 241-243.

Seasonal variation of zooplankton in Idukki Reservoir of Kerala, India was poor during two consecutive years except in the monsoon months of 1984. The young age and trophic depression stage accounts for the poor crop of zooplankton which comprised members of Rotifera, Cladocera, Ostracoda and Copepoda. Copepods were found dominant among zooplankton.
... 7 ref.

48. Khillare, Y.K. & S.B. Wagh (1988)

Dept. of Zoology, Marathwada Univ., Aurangabad-431 004, India.
Effect of ekatin on some physical parameters of whole body and tissue cations of the fish *Barbus stigma*.
Environ. & Ecol., **6**(1) : 70-72.

Barbus stigma exposed to a sublethal concentration of ekatin (0.00015 ppm) showed no significant changes in body weight but the rate of oxygen consumption of fish showed consistent increase upto 48 hours which later declined to 80% suggesting reduction of oxidative metabolism at 96 hours.
... 8 ref.

49. Kondal, J.K.[1], P.K. Saxena[1] & G.L. Soni[2]

1. Dept. of Zoology, Faculty of Basic Sciences, Punjab Agricultural Univ., Ludhiana-141 004, India.
2. Dept. of Biochemistry, Faculty of Basic Sciences, Punjab Agricultural Univ., Ludhiana-141 004, India.
Effect of vegetable oil factory effluent on the liver of the freshwater teleost, *Heteropneustes fossilis* (Bl.)-A biochemical study.
Biological Wastes, **25**(1) : 17-24.

Heteropneustes fossilis on being exposed to three sublethal concentrations of vegetable oil factory effluent for 150 days showed a significant decline in the activity of isocitrate, malate, and G-6-PDH dehydrogenases. The noted changes was dependent on the concentration of the effluent.
... 19 ref.

50. Krishnan, T. & T. Kannupandi (1984)

Centre of Advanced Study in Marine Biology, Annamalai Univ., Parangipettai-608 502.
Note on the abnormalities in the edible portunid crab *Scylla serrata* (Forskal).
J. mar. biol. Ass. India, **26**(1&2) : 180-181.

Abnormalities in the edible portunid crab *Scylla serrata* (Forskal) is reported for the first time from Porto Novo waters, east coast of India.
... 4 ref.

51. Kumar, K. Krishna & N.N. Pillai (1984)

Central Marine Fisheries Research Inst., Cochin-682 031.
Studies on survival of postlarvae of *Penaeus indicus* h. milne edwards under oxygen packing.
J. mar. biol. Ass. India, **26**(1&2) : 145-153.

A series of studies and experiments on the longevity of postlarvae of *Penaeus indicus* in flexible polythelene containers with oxygen have indicated that a survival rate of 70% could be obtained at a packing density of 250 postlarvae/litre after 24 hours under oxygen packing. Mortality of the postlarvae under oxygen packing has been attributed to cannibalism.

... 18 ref.

52. Kusuma, M.S., B. Neelakantan & R.G. Konnur (1988)

Dept. of Marine Biology, Karnataka Univ., Karwar-581 303, India.
Plankton distribution in the Kali estuary, Karwar Central West Coast of India.
Environ. & Ecol., **6**(1) : 115-119.

The plankton population of the lali estuary followed the bimodal cycle of yearly abundance, one during the pre-monsoon and the other in the post-monsoon period. The phytoplankton was constituted by diatoms and the major components of the zooplankton contributed by the presence of protozoans, larval stages of polychaetes etc.

... 5 ref.

53. Malhotra, Y.R. & Kuldeep Krishan Sharma (1988)

Dept. of Biosciences, Univ. of Jammu, Jammu-180 001, India.
Epizootic association of Vorticella with the developing eggs of *Puntius conchonius*.
Curr. Sci., **57**(16) : 909-910.

The present communication reports an infestation by Vorticella (Protozoa; ciliata; peritrichida) on the fertilized eggs of the freshwater fish, *Puntius conchonius*. The influence of this association on the hatching ability of the eggs of this fish is described.

... 5 ref.

54. Mane, U.H. & S.R. Akarte (1988)

Laboratory of Molluscan Endocrinology and Aquatic Toxicology, Univ. Dept. of Zoology, Marathwada Univ., Aurangabad-431 400, India.
Effect of pesticides on the gill ciliary activities of three freshwater lamellibranchs.
J. Environ. Biol., **9**(3) : 239-247.

Effect of two organophosphatase pesticides on the isolated gill ciliary activities of freshwater lamellibranchs, *Indonaia caeruleus*, *Lamellidens marginalis* and *Lamellidens corrianus* showed distinct variations in different seasons.

... 19 ref.

55. Menon, H.B., V. Ramesh Babu & J.S. Sastry (1988)

National Institute of Oceanography, Dona Paula, Goa-403 004, India.
Apparent relationship between thermal regime in antarctic waters & Indian summer monsoon.
Indian J. mar. Sci., **17**(2) : 87-90.

Austral winter seasonal and intra-seasonal variabilities of sub-tropical convergence and Antarctic Polar Front are examined using sea surface temperature patterns published in GOSSTCOMP charts for the India Ocean sector of the Southern Ocean during 2 contrasting years (1977 and 1979) of summer, monsoon over India.

... 18 ref.

56. Mishra, A.K., K.S. Prasad, V. Subramanian & A. Bhattacharya (1988)

National Remote Sensing Agency, Hyderabad-500 037, India.
Bio-optical studies in the Bay of Bengal waters off Madras coast, India.
Indian J. mar. Sci., **17**(2) : 99-101.

An attempt is made to interpret the results of bio-optical characteristics like reflectance, absorbance and backscattering of selected stations in the Bay of Bengal with reference to the chlorophyll concentrations.

... 6 ref.

57. Mohan, M.V. & T.M. Sankaran (1988)

College of Fisheries, Kerala Agricultural University, Panangad-682 506, Cochin.
Length-weight relationship of Indian major carps with improvement in expressing exponential formula.
J. Aqua. Trop., **3**(1) : 43-46.

The length and weight of *Catla catla*, *Labeo rohita* and *Cirrhinus mrigala* from South India was studied. The above relationship was achieved by taking into consideration the smallest hatchlings to the largest fish available. In order to avoid ambiguity an improvement in expressing the exponential formula was suggested.

... 4 ref.

58. Murugan, N. & R.K. Moorthy (1988)

Dept. of Zoology, Madurai College, Madurai-625 011, India.
Laboratory studies on the life span, growth, fecundity and embryonic development of *Daphnia cephalata king* (Crustacea : Daphnidae).
Proc. Indian Acad. Sci. (Anim. Sci.), **97**(4) : 367-377.

Studies on *Daphnia cephalata* relating to its longevity, instar duration primiparons at the fourth instar, the remaining at fifth. About 200 eggs were produced during the life span of 52 days when the animals were reared at 27 ± 2°C.

... 10 ref.

59. Nagabhushanam, R., K. B. Jaiswal & R. Sarojini (1988)

Dept. of Zoology, Marathwada Univ., Aurangabad-431 004.
Altered carbohydrate metabolism in the freshwater prawn *Macrobrachium kistnensis* exposed to a sublethal concentration of naphthalene.
J. Aqua. Trop., **3**(1) : 25-32.

Effect of napthalene on the level of glycogen, lactic acid and the activation of succinic dehydrogenase and lactate dehydrogenase in hepatopancreas, muscles and gills of *Macrobrachium kistensis* was studied. The result revealed that the said alterations are influenced by the duration of exposure.

... 24 ref.

60. Nanaware, S.G. & P.S. Mane (1987)

Dept. of Zoology, Shivaji Univ., Kolhapur-416 004, India.
Effect of Na-PCP on the behaviour of *Channa orientalis* (Schn.).
Poll. res., **6**(3&4) : 117-121.

Sodium pentachlorophenate, a biocide (preservative) to cotton, leather and sugar factory has been found to cause considerable damage to *Channa orientalis* at higher concentrations (0.3 to 0.5 ppm) but innocuous at sublethal concentrations (.05, 0.1 and 0.2 ppm). This has been discussed in relation to digestive, respiratory and cardio-vascular physiology of the fish.

... 26 ref.

61. Naskar, Kumudranjan[1] & S.K. Saha[2] (1988)

1. CICFRI, Barrackpore-743 101, West Bengal.
2. Yojana Bhavan, Room No. 504, New Delhi.
Utilization of domestic wastes for integrated farming in the tropics.
J. Aqua. Trop., **3**(1) : 37-41.

Highly fertile domestic sewage effluent can be utilized for rearing fish, vegetables and paddy. This organic matter should be utilized to meet the demand of Potash, Nitrogen and Phosphate. The present communication has explained the integrated farming systems by recycling the waste water.

62. Naskar, Kumudranjan[1], S.K. Saha[2] & A.K. Datta[2] (1988)

1. CIFRI, Barrackpore-743 101, West Bengal.
2. Rahara Res. Centre of CIFRI, Rahara-743 186, India.
Utilization of domestic waste water for rice production.
Environ. & Ecol., **6**(1) : 125-128.

Experiments were conducted in a 0.24 ha rice fields fertilized exclusively with inorganic nutrients, inorganic + sewage effluent and sewage effluent alone. This experiment indicated that the better and low cost rice yield can be obtained through the rational utilization of domestic sewage water.

... 8 ref.

63. **Neelakantan, B., U.G. Naik, P.N. Prasad & M.S. Kusuma (1988)**

PG Dept. of Marine Biology, Karnataka Univ., Kodibag, Karwar-581 303, India.
Hydrobiology of Kali estuary and adjoining brackishwater systems, Karwar.
Environ. & Ecol., **6**(1) : 139-147.

Hydrography and plankton density at 15 stations of Kali estuary during pre-monsoon, monsoon and post-monsoon seasons were presented. Maximum phytoplankton density and primary production were observed while the maximum zooplankton density was recorded in pre-monsoon period.

... 11 ref.

64. **Pandey, P.K., G.K. Thakur & B.P. Choudhary (1988)**

P.G. Dept. of Zoology, Bhagalpur Univ., Bhagalpur-812 007, India.
Effect of malathion and metacercarial infection on liver lipofuscin accumulation of the air-breathing fish *Heteropneustes fossilis*.
Environ. & Ecol., **6**(1) : 234-236.

Investigations were made to evaluate the effect of stress on the lipofuscin pigment in *Heteropneustes fossilis*. In both the conditions, that is, malathion treated and meta cercarial infected, the lipofuscin accumulation was significantly reduced.

... 12 ref.

65. **Patil, S.G., D.K. Harshey & D.F. Singh (1987)**

ZSI, Freshwater Biological Station 1-1-300, B. Ashoknagar, Hyderabad-20, India.
Limnological studies of a tropical freshwater fish tank of Jabalpur, M.P., phytoplankton, Part-II.
Poll. res., **6**(3&4) : 109-112.

The authors found the appearance of insect part throughout his aerobiological investigation (1.3.82 to 31.1.83). The significance of the insect part as pests over the sugarcane crop has also been discussed.

... 13 ref.

66. **Pillai, C. Thankappan[1] & Yvonne M. Freitas[2] (1984)**

1. Fisheries College, Panangad, Kerala.
2. Dept. of Microbiology, St. Xavier's College, Bombay.
Hemorrhagic septicemia in some marine fishes of India.
J. mar. biol. Ass. India, **26**(1&2) : 47-49.

Hemorrhagic septicemia in four marine fishes *Epinephelus pantherinus*, *Lutianus johni*, *Platax teira* and *Trachinotus ovatus* were documented for the first time from this country. The morphological, cultural, physiological and fermentative characteristics of the isolated bacteria were studied and the aetiological agent was identified as pseudomonas

... 12 ref.

67. **Rajendran, N., J. Tagore & R. Kasinathan (1988)**

Cen tre of Advanced study in Marine Biology, Parangipettai-608 502, India.
Heavy metal concentrations in oyster *Crassostrea madrasensis* (Preston) of Cuddalore backwaters, Southeast coast of India.
Indian J. mar. Sci., **17**(2) : 174-175.

Fe, Cu, Zn and Mn were determined in the soft body parts of *C. madrasensis*. The concentrations of Fe were higher than other metals analysed. Gill and mantle exhibited higher concentration of metals than the other soft tissues.

... 14 ref.

68. **Rajendran, N.[1] & V.K. Venugopalan[2] (1988)**

1. National Research Institure for Pollution & Resources, 16-3 Onogawa, Tsukuba, Ibaraki 305, Japan.
2. Centre of Advance Study in Marine Biology, Parangipettai-608 502, India.
Toxicity of organochlorine pesticides to zooplankton of Vellar estuary.
Indian J. mar. Sci., **17**(2) : 168-169.

Toxicity of organochlorine pesticides to zooplankton, collected from Vellar estuary was studied by determining 24 h LC_{50} values and their confidence limits. DDT was highly toxic to the zooplankton assayed, followed by lindane and endosulfan. *Sagitta* sp., was more tolerant to DDT and endosulfan than the others.

... 11 ref.

69. **Raje, Sadashiv Gopal (1984)**

CMFRI, Cochin-682 031.
Deformed specimen of *Megalaspis cordyla* (Linn.) from Veraval water.
J. mar. biol. Ass. India, **26**(1&2) : 177-179.

A distinctly abnormal specimen of horse mackerel *Megalaspis cordyla* without third dorsal finlet and a priminent hunch, measuring 312 mm total length is reported from Saurashtra waters.

... 4 ref.

70. **Ramanathan, A.L., V. Subramanian & P. Vaithiyanathan (1988)**

School of Environmental Sciences, Jawaharlal Nehru Univ., New Delhi-110 067, India.
Chemical & sediment characteristics of the upper reaches of Cauvery estuary, east coast of India.
Indian J. mar. Sci., **17**(2) : 114-120.

Major and minor element geochemistry of water and suspended and bed sediments collected from upper reaches of the estuary are studied to understand the geochemical process in the tropical estuarine systems. Suspended sediment concentrations increase at downstream with chlorinity.

... 25 ref.

71. **Rao, K. Sambasiva, A.K. Khan, S.M. Alam & R. Nagabhushanam (1988)**

Dept. of Zoology, Marathwada Univ., Aurangabad-431 004, India.
Seasonal toxicity of benzene to the marine edible crab *Scylla serrata*.
Environ. & Ecol., **6**(1) : 220-221.

Seasonal toxicity of petroleum hydrocarbon, benzene to the marine crab *Scylla serrata* was evaluated. The toxicity of benzene increased with increase in temperature. Highest mortality was observed in summer followed by monsoon. Winter showed the lowest LC_{50} values for 24,48,72 and 96 hours.

... 9 ref.

72. **Rao, Roshni & H.D. Kumar (1987)**

Post Box No. 14, Dept. of Botany, Banaras Hindu Univ.,
Varanasi-221 005, India.
In situ nitrogen-fixation by cyanobacteria in a polluted pond in Varanasi, India.
Poll. res., **6**(3&4) : 127-132.

Algal nitrogen fixation was found to take place in presence of *Heterocystus cyanobacteria* in the eutrophic pond of Varanasi and the regulating factors being light intensity, temperature and the presence of ammonium ion.

... 20 ref.

73. **Rao, V.N.R. & C.P. Valsaraj (1984)**

Centre of Advance Study in Botany, Univ. of Madras, Madras-600 025.
Hydrobiological studies in the inshore waters of the Bay of Bengal.
J. mar. biol. Ass. India, **26**(1&2) : 58-65.

The occurrence and abunance of diatoms in the near shore waters of the bay in relation to physico-chemical characteristics of waters was studied. Studies on growth of characteristic of some diatoms and blue green algae in the laboratory revealed that while diatoms seemed to thrive better under existing hydrological conditions blue green algae preferred a medium very rich in nitrogen nutrients.

... 24 ref.

74. **Ravindran, K. (1988)**

Dept. of Zoology, Sri Venkateswara Univ., Tirupati-517 502, India.
Effects of petroleum hydrocarbon toluene on carbohydrate metabolism of the fish *Tilapia mossambica*.
Environ. & Ecol., **6**(1) : 1-4.

The effects of toluene, a petroleum hydrocarbon, on the fish *Tilapia mossambica* were studied. Glycogen and total carbohydrate levels of fish decreased on exposure to toluene. Pyruvate level was decreased and lactate level increased during early toluene toxic stress.

... 15 ref.

75. Reddy, P. Malla & Md. Bashamohideen (1988)

Dept. of Zoology, Sri Krishnadevaraya Univ., Anatapur-515 003, India.
Toxic impact of fenvaterate on the protein metabolism in the branchial tissue of a fish, *Cyprinus carpio*.
Curr. Sci., **57**(4) : 211-212.

Hypo-proteinemia and other indicators of toxic stress in the branchial tissue of a fish, *cyprinus carpio* due to pesticide protein interaction have been revealed in the study.

... 11 ref.

76. Roy, P.K.[1] & Jayashree Datta Munshi[2] (1988)

1. P.G. Dept. of Zoology, Bhagalpur Univ., Bhagalpur.
2. P.G. Dept. of Botany, Bhagalpur Univ., Bhagalpur-812 007, India.
Toxicity of biocidal plant extracts to airbreathing fishes.
Environ. & Ecol., **6**(1) : 184-187.

Bioassay experiments were carried out with crude saponin extracts of plants Mollugo pentaphylla and *Acacia auricul aeformis* for 48 hours on the air-breathing fishes *Anabas testudineus* and *Heteropneustes fossilis*. These biocidal plant extracts were found to be more toxic to *H. fossilis* than *A. testudineus*. Further, Saponin of *Acacia* was more toxic than that of Mollugo.

... 6 ref.

77. Saidapur, S.K. & Y.S. Prasadmurthy (1988)

Dept. of Zoology, Karnatak University, Dharwad-580 003, India.
Effects of feeding and starvation on follicular development (Ovarian cycle) in the frog *Rana cyanophlyctis* (Schn.)
Indian J. Exp. Biol., **26**(7) : 520-524.

Effects of high, moderate, low feeding and starvation for 30 days on body weight and ovarian follicular kinetics were studied in the frog *Rana cyanophlyctis*.

... 20 ref.

78. Sakthivel, M. (1988)

Dept. of Zoology, Kamaraj College, Tuticorin-628 003, India.
Effects of varying dietary protein level on the blood parameters of *Cyprinus carpio*.
Proc. Indian Acad. Sci. (Anim. Sci.), **97**(4) : 363-366.

Effects of varying dietary protein levels on the blood of *Cyprinus carpio* revealed that the various blood cells and related parameters respond differently to the variation in the dietary protein.

... 21 ref.

79. Sampathkumar, Stephan J. & N. Sukumaran (1988)

Fisheries College, Tamil Nadu Agricultural Univ., Tuticorin-628 008.
Effect of strepto-paraxin in curing fin rot disease in pearl spot.
Fishing Chimes, 8(4) : 9-11.

The *Etroplus suratensis* affected by fin-rot were treated with potassium permanganate (4 ppm), followed by a dip in "Strepto-paraxin" solution of 13 ppm. The antibiotic administered through feed was found to be the most effective way in controlling the fin-rot in *Etroplus suratensis*.

... 8 ref.

80. Sastry, C.A. (1988)

Centre for Biosciences and Biotechnology, Dept. of Chemical Engineering, Indian Inst. of Technology, Madras.
Biological indicators of water quality.
Encology, **2**(10) : 1-8.

The paper deals with water quality and its indication through biological indices which is substantiated with five tables and thirteen types of indices. Biological indicators of water quality : Indices are Nygoard's algal indices, Palmer's algal pollution indices, Palmer's algal genus index, Palmer's algal special index, Sequential comparison index, Saprobic index of Pantle and Buck as well as of Knopp, Biotic index of Beck, and of Woodwiss (Trent system), Chandlier's index, Species diversity indices, and Diatoms as indicators. Methods of detecting pollution dealt with are : Zeluika and Masvan, Species deficit of Kothe and Physiological and Biochemical activity using TTC.

81. Saxena, D.[1], P.A. Lokabharathi[2] & D. Chandramohan (1988)

1. Dept. of Biology, Rani Durgavati Vishwavidyalaya, Jabalpur-482 001, India.
2. National Inst. of Oceanography, Dona Paula, Panaji, Goa-403 004, India.
Sulfate reducing bacteria from mangrove swamps of Goa, Central West coast of India.
Indian J. mar. Sci., **17**(2) : 153-157.

Levels of lactate and acetate oxidising sulfate reducing bacteria in sediment samples of mangrove swamps were in the order of 10^3 g^{-1} dry sediment and the counts decreased with depth.

... 18 ref.

8 2 Selvaraj, C.[1] & L. Kannan[2] (1986)

1. Govt. Arts College, Ariyalur-621 713, Tamil Nadu, India.
2. Centre of Advanced study in Marine Biology, Annamalai Univ., Parangipettai-608 502, Tamil Nadu, India.
Toxicity of organochlorine pesticide, lindane to the marine diatom *Bellerochea malleus* (Bt.W.) V.H. in culture.
Int. J. Ecol. Environ. Sci., **12** : 81-88.

Lindane, a persistent organochlorine pesticide was tested on a marine micro-alga (diatom). The effective concentration (96 h LC_{50}) was also determined for this test. As this diatom shows many transitional stages of inhibition of cytokinesis, it may be viewed as a suitable test material to unravel the physiology of inhibition of cell division.

... 24 ref.

83. Sengupta, A. & A.K. Roy (1988)

Rahara Res. Centre of CIFRI, Rahara-743 186, West Bengal, India.
Functional relationship between water discharge, silt ingress and tidal time at Bartala river, Hooghly estuary, India.
Environ. & Ecol., **6**(1) : 53-58.

The statistical relationship of water discharge and silt ingress in Bartala river of Hooghly estuary, West Bengal with tidal time was studied. The statistically fitted curves showed that the total silt ingress per unit volume of water was reduced to 26.4% than in the conventional system of a water intake.

... 7 ref.

84. Seshappa, G.[1] and B.K. Chakrapani[2]

1. No. 865, III cross Road, Sriramapura, Bangalore-560 021.
2. BNHS Ecological Res. Station, 331, Rajendranagar, Bhartpur-321 001, Rajasthan.
A comparison of meristic characters of the Malabar sole *Cynoglossus semifasciatus* day from different centres of the West coast of India.
J. mar. biol. Ass. India, **26**(1&2) : 123-131.

Meristic characters such as dorsal fin rays, anal finrays, caudal finrays, cephalic scales of the lateral line, post-cephalic scales of the lateral line, and the transverse rows of scales between the lateral lines of samples of *Cynoglossus semifasciatus* were used in the comparative study.

... 14 ref.

85. Sharma, B.K.[1], M.K. Das[2] & S.R. Das[2] (1988)

1. Krishi Vigyan Kendra & Trainers' centre, CIFRI, ICAR, Kausalyaganga, Bhubaneswar-751 002, India.
2. CIFRI, ICAR, Barrackpore-743 101, India.
Carp farming integrated with pig raising in India.
Environ. & Ecol., **6**(1) : 159-168.

Integrated fish cum pig farming for enhancing production of animal protein at low cost by pig wastes in fish ponds was investigated. The percentage of return on variable cost of the technology ranged from 75 to 77.8%. The present work showed the feasibility of the technology in saving chemical fertilizers and supplemental fish feed as an efficient means of waste disposal.

... 30 ref.

86. Sharma, L.L.[1], A.K. Gupta[1], C.S. Chaudhary[2], V.K. Rajbanshi[1] & O.P. Sharma[1] (1988)

1. Dept. of Limnology and Fisheries, Rajasthan Agriculture Univ., Udaipur-313 001, India.
2. Dept. of Fisheries, Govt. of Rajasthan, Bhilwara, Rajasthan (India)
Induced bundh breeding and rearing of fry of Indian major carps in a seasonal pond of southern Rajasthan.
J. Aqua. Trop., **3**(1) : 11-13.

Labeo rohita, Catla catla and *Cirrhinus mrigala*, were induced to spawn in a seasonal rainfed pond with the help of mild doze of pituitary. About 0.2 million healthy fingerlings were and computerised the economics.

... 7 ref.

87. **Shetty, D.C., T.R. Sujatha, R. Sudarshan & B. Neelakantan (1988)**

Dept. of Marine Biology, Karnataka Univ., Kodibag, Karwar-581 303, India.
Macrobenthic enrichment in the intertidal zone of Karwar beach due to the disposal of domestic sewage.
Environ. & Ecol., **6**(1) : 129-134.

A comparative faunal study on the beach between two intertidal regimes, one from the sewage disposal site and the other as reference site situated about 1 km. away was undertaken. A 2 km stretch of sewage duct running through almost the heart of the city disposed about 2.61 litres/second of domestic waste into the southern portion of Karwar beach.

... 14 ref.

88. **Shivaraj, K. M. & H.S. Patil (1988)**

Water pollution Res. Laboratory, Dept. of Zoology, Karnataka Univ., Dharwad-580 003, India.
Toxicity of cadmium and copper to a freshwater fish *Puntius arulius*.
Environ. & Ecol., **6**(1) : 5-8.

Lethal effects of cadmium and copper on fish *Puntius arulius* were evaluated by using static bioassay tests. The 24-, 48-, 72- and 96 hour LC50 values for cadmium were found to be 59.99, 45.7, 41d.7 and 39 mg/litre, respectively and LC_{50} values for copper were found to be 2.7,2.25,2.1 and 1.9 mg/litre respectively.

... 20 ref.

89. **Sindhu Kumari, S. & T.J. Pandian (1987)**

School of Biological Sciences, Madurai Kamaraj Univ., Madurai-625021, Tamil Nadu, India.
Effects of unilateral eyestalk ablation on moulting, growth, reporduction and energy budget of *Macrobrachium nobilii*.
Asian Fish. Sci., 1(1) : 1-17.

Unilateral eyestalk ablation in juvenile *Macrobrachium nobilii* advanced the onset of sexual maturity by 88 days. Ablated female prawns allocated more energy for egg production than did nonablated females. Ablated and non ablated prawns undertook nine and four molts respectively than adults.

... 41 ref.

90. **Singh, Atul Kumar (1988)**

U.P. State Fisheries Dept., Varanasi, U.P.
Spawning of major carps : HCG-steroid treatment.
Fishing Chimes, 8(4) : 74-75.

The use of 17 alpha 20 beta di-OH-prog in inducing spawning in major carps holds good promise. Synthetic chemicals are sufficient to bring about spawning. The method appears to be cheap and profitable to produce fish seed commercially.

... 3 ref.

91. Sinha, A.K.[1], C. Sinha[2] & R. Nikhil[1] (1988)

1. Dept. of Zoology, Co-Operative college.
2. Women's College, Jamshedpur-831 001.
Studies on yellow grub disease of freshwater fish *Channa punctatus* (Bloch).
Curr. Sci., **57**(4) : 218-219.

Pathogenicity in yellow grub disease of *Channa punctatus* caused by the metacercaria of *Euclinostomum heterostomum* and *Clinostomum giganticum* with the maximum intensity of infection was observed from April to August and the minimum in December and January.

... 2 ref.

92. Sivakumaran, K.P. (1984)

Centre of Advanced Study in Marine Biology, Parangipettai-608 502.
Unusual landing of oil sardine *Sardinella longiceps* Val. along Parangipettai (Porto Novo), southeast coast, India.
J. mar. biol. Ass. India, **26**(1&2) : 179-180.

Unusually abundant landings of oil sardine *Sardinella longiceps*, hitherto not reported along east coast is observed at Parangipettai coast during June-August 1986.

... 1 ref.

93. Srinivasan, A.[1], R. Santhanam[2] & G. Jegatheesan[2] (1988)

1. MPEDA, Machilipatnam, A.P.
2. Fisheries College, Tamil Nadu Agricultural Univ., Tuticorin-628 008, India.
Biomass and seasonal distribution of planktonic tintinnids of Pullavazhi estuary, southeast coast of India.
Indian J. mar. Sci., **17**(2) : 131-133.

Seventeen species of tintinnids were recorded from Pullavazhi estuary, Gulf of Mannar. By counts both the stations registered primary and secondary peaks. The non-agglomerated species and the agglomerated species were responsible for the primary peak at 1 st and 2 respectively.

... 12 ref.

94. Srivastava, Arun K. & Anil K. Srivastava (1987)

Dept. of Zoology, Univ. of Gorakhpur, Gorakhpur-273 009.
Acute toxicity of Kepone to the freshwater catfish *Heteropneustes fossilis*.
Nat. Acad. Sci. Letters, **10**(12) : 439-441.

Bioassay experiments were carried out to determine the acute toxicity of an organochlorine insecticide to the common Indian freshwater catfish. This report is the first on the toxicity of Kepone to an Indian fish.

... 16 ref.

95. Talesana, C.L., Rajni Arora & Abdul Jurfi (1988)

Comparative histochemical and biochemical study on storage characteristics and culinary values of dish, goat & chicken muscle.
Indian J. Exp. Biol., **26**(5) : 387-396.

Histochemical and biochemical changes with respect to myofibrillar-ATPase, succinate dehydrogenase and lactate dehydrogenase isozymes were studied in normal and cold stored muscles of fish, *Cyprinus carpio*, goat and chicken. Attempts were made to correlate biochemical observations during storage to muscle structure, tenderness and culinary value.

96. Uma, K. & T. Subramoniam (1984)

Dept. of Zoology, Life Sciences Bldg., Univ. of Madras, Gindy Campus, Madras-600 025.
A comparative study on the spermatophore in *Scylla serrata* (forskal) (Decapoda : brachyura) and *Clibanarius longitarsus* (de man) (decapoda : anomura)
J. mar. biol. Ass. India, **26**(1&2) : 103-108.

Based on the anatomy and histology of the vas deferens of the branchyuran crab *Scylla serrata*, the vas deferens is classified into the proximal vas deference middle vas deference distal vas deference and the ejaculatory duct.

... 25 ref.

97. Valecha, Vijay, Ranjana Trivedi & G.P. Bhatnagar (1987)

Dept. of Limnology, School of Biological Sciences, Bhopal Univ., Bhopal, India.
Biological assessment of trophic status of lower lake of Bhopal.
Poll. Res., **6**(3&4) : 91-93.

An attempt is made to classify the Lower Lake of Bhopal with regard to its trophic status on the basis of compound quotient of Nygaard (1949). The high range of compound quotient (10 to 19) recorded indicates the highly eutrophic nature of the lake.

... 5 ref.

98. Valecha, Vijay, Ranjana Trivedi & G.P. Bhatnagar (1988)

Dept. of Limnology, School of Biological Sciences, Bhopal University, Bhopal.
Thermal stratification in a tropical lake : the lower lake of Bhopal, India.
Poll. res., 6(3&4) : 113-116.

The lower lake of Bhopal remains thermally stratified round the clock during hot weather and for the rest of the year stratification was observed between 2 P.M. to 6 P.M. and isothermal condition early in the morning.

... 11 ref.

99. Vardia, H.K.[1], P.S. Rao[2] & V.S. Durve [3] (1988)

1. Regional Agricultural Res. Station, Indira Gandhi Agriculture Univ., Jagdalpur-494 005, India.
2. Dept. of Fishery Science, Veterinary College, Andhra Pradesh Agricultural Univ., Rajendranagar, Hyderabad-500 030, India.
3. Dept. of Limnology and Fisheries, Sukhadia Univ., Udaipur-313 001, India.

Effect of copper, cadmium and zinc on fish-food organisms, *Daphnia lumholtzi* and *Cypris subglobosa*.

Proc. Indian Acad. Sci. (Anim. Sci.), **97**(2) : 175-180.

The results of static and acute bioassay studies on *Daphnia lumholtzi* (Caldocera) and *Cypris subglobosa* (Ostracoda) to the varying dosages of Cu, Cd and Zn were presented. The study indicates that the waters getting polluted by heavy metals even at low concentration would remove the population of fish-food organisms without directly affecting fish fauna.

... 12 ref.

100. Vasanthakumar, J. & P. Selvaraj (1988)

Dept. of Fishery Economics, Tamil Nadu Agricultural Univ., Fisheries College, Tuticorin-628 008, India.

A socio-economic study of constraints to composite fish culture in Tamil Nadu.

J. Aqua. Trop., **3**(1) : 63-69.

The constraints responsible for the wide yield gaps were analysed in depth. The present study identified various resource constraints, production constraints, management constraints and marketting constraints.

.:. 13 ref.

101. Venkataramanujam, K., N. Ramanathan & V.K. Venkataramani (1984)

Fisheries College, Tamil Nadu Agricultural Univ., Tuticorin-628 008, India.

Development studies through laboratory rearing of the slender lizard fish *Saurida gracilis* (auoy and gaimard, 1824) (Pisces : synodontidae).

J. mar. biol. Ass. India, **26**(1&2) : 174-177.

The egg, post larvae of the slender lizard fish *Saurida gracilis* are described and figured from material reared in the laboratory. Comparisons are made with published descriptions of other lizard fishes.

... 13 ref.

102. Vijayaraghavan, Sumitra, L. Krishnakumari & J.P. Royan (1988)

National Inst. of Oceanography, Dona Paula, Goa-403 004, India.

Food conversion by *Penaeus monodon* (Fabr.) fed on decapsulated cysts of Artemia.

Indian J. mar. Sci., **17**(2) : 172-173.

Growth and food conversion efficiencies were high in shrimps *(P. monodon)* fed on decapsulated cysts. Decapsulated cysts as feed led to higher food conversion efficiency than feeding freshly hatched nauplii.

... 16 ref.

103. Vivekanandan, E. & D.B. James (1984)

Madras Res. Centre of CMFRI, 29 Commander-in-Chief Rd., Madras-600 105.
Length-weight relationship in four species of threadfin breams from Madras.
J. mar. biol. Ass. India, **26**(1&2) : 132-135.

The regression coefficients of length-weight relationship of males and females of *N. mesophion* are significantly different at 5% level. In *N. tolu, N. delagoae* and *N. lutens*, the differences are not significant. Hence, a regression equation common to both sexes is recommended.

... 3 ref.

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